

CLAIMS

1) A closable opening device (4) for a sealed package (1) of a pourable food product, said device (4) comprising:

- a frame (15) fitted about a pierceable portion (10) of said package (1) and defining a through hole (16);

- a removable threaded cap (17) which screws onto said frame (15) to close said hole (16);

- a tubular cutting member (18) engaging said hole (16) and having an end cutting edge (31) which cooperates with said pierceable portion (10) to unseal said package (1);

- first connecting means (32, 33) for connecting said cap (17) and said cutting member (18) so as to rotate said cutting member (18) during rotation of the cap (17) to unscrew the cap off said frame (15) when unsealing said package (1); and

- second connecting means (24, 26) for connecting said frame (15) and said cutting member (18) so as to move said cutting member (18) along a spiral path through said pierceable portion (10) in response to said rotation of said cap (17);

characterized in that said cutting edge (31) comprises a main blade (36); and at least a number of first teeth (37a) which, proceeding along said cutting edge (31) in the opposite direction to the direction of

rotation of said cutting member (18), are located downstream from the main blade (36); said first teeth decreasing gradually in height so as to act successively on said pierceable portion (10).

2) A device as claimed in Claim 1, characterized in that said main blade (36) has a cutting side (38) facing in a traveling direction of said cutting member (18) with respect to said pierceable portion (10) and sloping backwards.

3) A device as claimed in Claim 1 or 2, characterized in that the first teeth (37a) decrease linearly in height as of said main blade (36).

4) A device as claimed in Claim 3, characterized in that said first teeth (37a) have respective ends lying along a line (L) sloping less than said spiral path (T) of said cutting member (18).

5) A device as claimed in Claim 3 or 4, characterized in that one of said first teeth (37a), located adjacent to said main blade (36), is the same height as said main blade (36).

6) A device as claimed in any one of the foregoing Claims, characterized in that said cutting edge (31) of said cutting member (18) comprises a number of second teeth (37b) located on the opposite side of said first teeth (37a) to said main blade (36).

7) A device as claimed in Claim 6, characterized in that said second teeth (37b) are all the same height, and are at most equal to the minimum height of said first

teeth (37a).

8) A device as claimed in Claim 6 or 7, characterized in that said cutting edge (31) of said cutting member (18) comprises an auxiliary blade (42) having a circumference which is 3 to 7 times the width of one of said first or second teeth (37a, 37b).

9) A device as claimed in Claim 8, characterized in that said auxiliary blade (42) has a cutting side (44) facing in the traveling direction of said cutting member, and having substantially the same slope as the sides of said first and second teeth (37a, 37b).

10) A device as claimed in any one of the foregoing Claims, characterized in that said frame (15) comprises a cylindrical collar (20) for receiving said cap (17) and defining said hole (16); and in that said second connecting means comprise an inner thread (24) of said collar (20) and an outer thread (26) of said cutting member (18).

11) A device as claimed in any one of the foregoing Claims, characterized in that said frame (15) and said cutting member (18) are molded in one piece in a preassembly configuration in which they are joined coaxially with each other by breakable joining means (30).